

The Slovenian National Action Plan; December 2013

No.	Future action / activity	Area	Status	Finalization	Level
1	SUP SUP comprises of a set of modifications/ improvements (see numbers 1.1 to 1.10) that will be implemented in steps until the end of 2016. Some of the discussed recommendations (see related recommendations) are to be verified within the licensing and implementation of the SUP. (for SUP details see chapter 2 in Part IV)	SUP	in progress	2018	site
1.1	Safety upgrade of AC power supply	SUP	in progress	2015	site
1.2	New pump for supplying SGs; in a bunkered building, with a dedicated water supply	SUP	in progress	2018	site
1.3	Installation of alternative ultimate heat sink	SUP	in progress	2018	site
1.4	Additional pumps (low and high pressure, as well as a special pump for seal injection) in a bunkered building, with a dedicated water supply	SUP	in progress	2018	site
1.5	Containment integrity safety upgrades including containment filtered vent systems and PARs	SUP	implemented	2013	site
1.6	Establishment of emergency control room	SUP	in progress	2018	site
1.7	Installation of fixed spray system around the SFP with provisions for quick connection from different sources of water.	SUP	in progress	2015	site
1.8	Mobile heat exchanger with provisions to quick connect to SFP, containment sump or reactor coolant system	SUP	in progress	2018	site
1.9	Flood protection upgrade (additional protection of nuclear island and bunkered buildings)	SUP	in progress	2015	site
1.10	Establishment of new technical support center and upgrade of existing operational support center (emergency operating facilities)	SUP	in progress	2018	site
2.1	SNSA shall amend its legislation to include: <ul style="list-style-type: none"> • requirements regarding the use of advanced deteriorating weather warning systems • requirements regarding the use of seismic monitoring systems • PSA Level 3 requirements (at least for new NPPs) • requirements for Beyond Design Basis Accidents I&C for Spent Fuel Pool • emergency planning requirements for prolonged SBO in the areas of communications capability (onsite, e.g., radios for response teams and between facilities, and offsite, e.g., cellular telephones, satellite telephones), ERDS capability, training and exercises, and equipment and facilities 	legislation	planned	2014	national
2.2	The SNSA shall consider amending its regulation for the design basis by more stringent safety objectives for: <ul style="list-style-type: none"> • Prevention and mitigation of core-melt accident in reactor and in spent fuel storage to avoid off-site long term contamination • Large or early release to be practically eliminated (for new NPPs) • Increase robustness of NPPs to be able to face natural hazards more severe than the ones considered in the design basis (DEC); this should also include requirements for test and maintenance of equipment, training,... This will be done mainly by following WENRA/ENSREG new initiatives, updated RL... The SNSA shall also examine whether more detailed requirements are needed regarding LOOP, SBO and loss of UHS	legislation	planned	2014	national

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3	<p>In January 2012 SNSA issued the third decision regarding the Fukushima event requiring from the Krško NPP to review the basis and assumptions for the Radiological Emergency Response Plan. This is to be finished by March 2013. The results of the review, possible proposals for improvements of the Radiological Emergency Response Plan, shall be implemented as appropriate.</p> <p>In addition the SNSA (together with other appropriate stakeholders) shall give further consideration to:</p> <ul style="list-style-type: none"> • supplementing the national radiological emergency response plan with provisions for off-site support regarding to the long-term fuel supply and also some additional pieces of mobile equipment in case of widespread disruption of plant's infrastructure • within the supplementing of national radiological emergency response plan further consideration shall be given to: <ul style="list-style-type: none"> - Reference levels for importing food, - Trans-boundary processing of goods and services such as container transport - Approach / philosophy and associated limits and criterion to govern the 'remediation' phase of the event - Return to evacuated area criteria and criteria for return to normal from the emergency state - Establishing contamination monitoring protocols and locations during the recovery phase • preparing national strategy (also amending legislation if needed) regarding solutions for post-accident contamination and the treatment of potentially large volumes of contaminated water • enhancement of intervention personnel training, trans-boundary arrangements and education of the public and media • enhancing cooperation with neighboring countries (especially Croatia), including mutual exercises • enhancing exercises by including all interface points (National, Regional, Municipal...), performing longer term exercises for better reflection of the extreme events challenges, and incorporating failure of communication systems and radiation data availability into drill programs • enhancement of national radiological monitoring system 	emergency response	<p>in progress</p> <p>(this action is divided into 8 activities, of which 3 have been implemented in 2013)</p>	2016	national
4	<p>SNSA shall assign dedicated inspections to:</p> <ul style="list-style-type: none"> • verify the external hazard protection equipment; • systematically review and inspect SAME equipment, SAMGs, test and maintenance procedures, as well as full scale training events at the Krško NPP with the emphasis on how the limited number of staff are able to cope with equipment deployment and transfer of additional fuel to the users, what are the available and needed times, are there enough resources (human and equipment) available,... • check what are plant's capabilities to power communications equipment needed to communicate onsite (e.g., radios for response teams and between facilities) and offsite (e.g., cellular telephones, satellite telephones) during a prolonged SBO; 	inspection	<p>in progress</p> <p>partly implemented; three inspections that cover these issues were performed in 2013</p>	2014	site
5	<p>The SNSA shall consider requiring the plant to perform additional studies regarding:</p> <ul style="list-style-type: none"> • accident timing, including core melt, reactor pressure vessel (RPV) failure, basemat melt-through, SFP fuel uncover, etc., using different computer codes • radiological protection equipment for SA response • analysis and identification of situations that would prevent performance of work for radiological reasons; • the question of stress on staff behavior including emotional, psychological and cultural aspects associated with emergency response and associated training and support 	additional studies	<p>to consider</p> <p>parts of this action are already being implemented (e.g. additional analysis regarding accident timing...)</p>	2017	site

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6	Nuclear safety infrastructure in Slovenia needs more political support. Only in such environment the human resource capacity and competence across all organizations in the field of nuclear safety can be further developed. SNSA shall organize a meeting, where this topic shall be brainstormed by all involved parties (the utility, the regulatory body, TSOs...). Special action plan shall be prepared and executed to enhance political support to nuclear safety infrastructure.	nuclear safety infrastructure	planned	2014	national
7	To enhance its processes SNSA shall: <ul style="list-style-type: none"> reconsider, which of the international meetings/groups are of outmost importance, since the decreasing number of staff and increasing number of international activities the quality of regular work may start to suffer review its capability for evaluating defense-in-depth to see whether and how it could be further enhanced enhance its staff training on severe accidents and SAMGs 	SNSA processes	in progress	2015	national
8	The SNSA shall consider inviting the following peer review missions <ul style="list-style-type: none"> additional RAMP mission (best after completion of SUP) to again properly and independently validate the SAMGs. Likewise consideration shall be given to inviting peer review missions to reassess the external hazards a follow-up IRRS mission in 2014, and next IRRS mission in the next 5-6 years OSART mission to review plant design safety features and related modifications (in next 3 years) EPREV (Emergency Preparedness Review) mission 	peer reviews	in progress IRRS follow-up and EPREV missions have already been invited in 2013 (2014 and 2016 respectively)	2017	site
9	SA plant parameters are being transferred to regulator premises. Still, this system needs a revision to include all needed SA parameters, increase reliability of the system...	ERDS	in progress	2014	site
10	A full scope PSA (including Level 2) for low power and shutdown modes shall be implemented for the Krško NPP by the end of 2015. SNSA shall consider requiring a PSA for the Krško's Spent Fuel Pool.	PSA	in progress	2015	site
11	SNSA shall (together with the operator) analyze how the following topics are taken into account, maintained and improved: <ul style="list-style-type: none"> Transparency; public discussion of safety issues An open and trustful relationship between regulators, operators and the public with keeping in mind their respective roles and functions Define appropriate actions to ensure that the desired safety culture characteristics are achieved in the regulatory and operational organizations Methods to evaluate and detect degraded safety culture 	safety culture	to consider	2014	national

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12	<p>Within the reassessment of its severe accident management strategy, existing design measures and procedures, the operator has also reassessed its possibilities for alternative spent fuel strategy [16]. The results showed that best strategy would be storing the spent fuel in dry cask storage with a possibility to combine it with later reprocessing.</p> <p>In accordance with the latest study further actions shall be implemented on the national level to change the national strategy and to enable licensing of the modification.</p>	reviews and NPP improvements	planned	2018	national